REMARKS

Claims 1-35 are pending in the present application. In the above amendments, claims 1-33 have been amended to correct antecedent basis and to clarify the claimed subject matter, and new claims 34 and 35 have been added.

Applicant respectfully responds to this Office Action.

Claim Rejections – 35 USC § 112

The Office Action rejected claims 1-33 under 35 U.S.C. §112, second paragraph, as being allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

With regard to claims 1, 6, 11, 16, 21, 24, 27, 29 and 31, the Office Action alleges that the language "may involve a lossy speech or audio compression algorithm" is indefinite. Applicant had deleted this language from claims 1, 6, 11, 16, 21, 24, 27, 29 and 31, thus this rejection is now moot.

With regard to claims 2, 3, 7, 8, 12, 13, 17, 18, 22, 23, 25, 26, 28, 30, 32 and 33, the Office Action alleges that the term "relationships" is unclear. Applicant has amended claims 2, 3, 7, 8, 12, 13, 17, 18, 22, 23, 25, 26, 28, 30, 32 and 33 to clarify that the relationship is the association between bit parameters and sound parameters. As such, Applicant submits that this rejection is now moot.

Claim Rejections – 35 USC § 102

The Office Action rejected claims 1-33 under 35 U.S.C. §102(b) as being allegedly anticipated by U.S. Patent No. 4,903,301 to Kondo et al. The rejection is respectfully traversed in its entirety.

Kondo discloses a system for converting speech into digital form and transmitting the digital (coded) speech signals with variable bit rates. As illustrated in Figure 1, a speech signal S_i is sampled and input into a coding unit 1 in the form a digital signal S_{IN}. The coding unit 1 extracts characteristics of the digital signal and transforms the characteristics into coded data. The coded data is then outputted from the coding unit 1 in the form of a data series S_2 in which the parameters constituting the coded data are arranged with the order of decreasing influence given to the quality of the speech. Digital signal S_2 is then input into a bit stealer 2 which controls the amount of data that is transmitted by omitting lower priority data bits. The bit stealer 2 outputs the reduced data S_3 and sends this data S_3 to a transmission line 3 for transmission. This allows the bandwidth of the digitized speech signal to be variable as the least important bits of digital data are omitted during transmission. The data S_3 that is transmitted across transmission line 3 is *digital data.*

Digital data S_3 is then input into a bit filler 4 connected to the other end of the transmission line 3 where it is transformed into a data series S_4 by replacing the bits of lower priority of the data series S_2 that were omitted at the transmission by "0". S_4 is then input into a decoding unit 5 which extracts parameters from each of the speech signals from the data series S_4 and decodes the sound (*in the form of digital data*) on the basis of these parameters. (See Col. 4, lines 19-57 and Figure 1)

To anticipate a claim under 35 U.S.C. § 102(b), the reference must teach every element of the claim and "[t]he identical invention must be shown in as complete detail as is contained in the … claim." (see MPEP §2131).

Claims 1, 11, 16, 21, 24, 27, 29 and 31

As to independent *Claims 1, 11, 16, 21, 24, 27, 29 and 31,* the Office Action states that Kondo teaches every element of claims 1, 11, 16, 21, 24, 27, 29 and 31. Applicant respectfully disagrees with the characterization of Kondo.

The present application provides a method and apparatus for communicating digital data by transmitting the digital data in the form of acoustic sound waves (i.e., acoustic signals *which are analog signals*). A data coder converts the digital data to be transmitted into at least one sound parameter, such as pitch. The sound parameters are converted into acoustic sound waves (i.e., acoustic signals) to acoustically transfer the digital data. (See paragraphs [0025] and [0026] of the published application) A sound analyzer then receives the transmitted acoustic sound waves and extracts the sound parameters. A data decoder then converts the extracted sound parameters back into the digital data. In other words, data is being transmitted in the form of acoustic sound waves and not in the form of digital signals as in Kondo. (See paragraphs [0027] and [0038] of the published application)

Claims 1, 11, 21, 27, and 31 – Method and Apparatus for transmitting compressed sounds

The Office Action cites Kondo (Col. 1, lines 57-61) as allegedly teaching an apparatus and method for converting *"digital data into . . . sound parameters"* and converting *"sound parameters into acoustic sound waves"* for transmission.

As described above, Kondo discloses a system and method for digitizing speech and transmitting the digitized speech with a variable bit rate. As illustrated in Figure 1 of Kondo, an analog signal is digitized (by coder unit 1) and transmitted in digital form as signal S_3. Note that the analog signal S_1 is contains just speech (not digital data). Kondo discloses a system that is the opposite of the present claimed invention (where digital data is converted into acoustic sound waves for transmission). As defined in the present application, the digital data being transmitted as acoustic sound waves. (See paragraph [0026] of the published application) Since Kondo only teaches transmitting digital data and not acoustic sound waves as claimed, Kondo fails to teach the limitations of converting *"digital data into . . . sound parameters"* and converting *"sound parameters into acoustic sound waves"* for transmission as in amended claims 1, 11, 21, 27 and 31. Furthermore, Kondo fails to disclose the use of a sound synthesizer or equivalent and thus could not generate acoustic sound waves from sound parameters extracted from digital data.

Claims 6, 16, 24, 29, and 31 – Method and Apparatus for receiving compressed sounds

The Office Action cites Kondo (Col. 1, lines 57-61) as teaching extracting *"one or more types of sound parameters from . . . acoustic sound waves" and* converting the *"sound parameters into the digital data."*

As described above with regard to claims 1, 11, 21, 27, and 31, Kondo discloses a system and method for transmitting digital data *and not acoustic sound waves* as in the present application. In Kondo, speech is converted into digital data which is transmitted by a bit stealer 2 (having a bit sorter 13) over a transmission line 3 and is received by a bit filler 4 over the same transmission line 3. (See Figure 1) The system of Kondo is clearly designed for digital data transmission not acoustic sound wave transmission as claimed. As claimed in the present application, the digital data converted to acoustic sound waves for transmission. By contrast, the speech data transmitted in Kondo is transmitted in digital form. Consequently, Kondo fails to teach the limitation of extracting *"one or more types of sound parameters from . . . acoustic sound waves" and* converting the *"sound parameters into the digital data"* as in amended claims 6, 16, 24, 29, and 31. Furthermore, Kondo fails to disclose the use of a sound analyzer or equivalent and thus could not receive compressed sound and extract sound parameters extracted from the compressed sound.

Based on at least the foregoing reasons, Applicant respectfully submits that independent claims 1, 11, 16, 21, 24, 27, 29 and 31 are patentably distinguishable over Kondo. Therefore, Applicant respectfully requests allowance of independent claims 1, 11, 16, 21, 24, 27, 29 and 31.

Claims 2, 3, 7, 8, 12, 13, 17, 18, 22, 23, 25, 26, 28, 30, 32 and 33

As to dependent claims 2, 3, 7, 8, 12, 13, 17, 18, 22, 23, 25, 26, 28, 30, 32 and 33, the Office Action also cites Kondo (Col. 2, lines 14-29) as teaching the limitations therein. However, dependent claims 2, 3, 7, 8, 12, 13, 17, 18, 22, 23, 25, 26, 28, 30, 32 and 33 set forth *"one or more sets of relationships"* where the relationships are defined as the association between the bit patterns and the sound parameters. (See paragraphs [0032] and [0033] of the published application) A careful review of Col. 2, lines 14-29 of Kondo indicates a plurality of sort patterns that are used to transform the bits of coded data into a plurality of series of data having different bit arrangements. The sort patterns indicate the order of the bit arrangement of the speech data while making them correspond to template identification numbers. (See Col. 8, lines 17-24) In order to find the optimum bit sort type, by which the speech quality is only slightly degraded, at first the inputted speech is roughly categorized and the parameters are sorted out in a sort format selected according to the result of the category judgment. A ROM stores template data of a plurality of representative category of speeches used for the judgment of the category of speeches. (See Col. 7, lines 16-21) This sorted information determines which data has the lowest priority and would least affect the quality of speech received if omitted.

In view of the above, the sort patterns of Kondo are not relationships between bit patterns and sound parameters as defined by the present application. Consequently, Kondo fails to teach the limitations of claims 2, 3, 7, 8, 12, 13, 17, 18, 22, 23, 25, 26, 28, 30, 32 and 33. Applicant also submits that this claim is in condition for allowance due to its dependence on independent claims 1, 11, 16, 21, 24, 27, 29 and 31.

Claims 4, 5, 9, 10, 14, 15, 19 and 20

As to claims 4, 5, 9, 10, 14, 15, 19 and 20, Applicant submits that Kondo fails to teach that "*a sound parameter represents one value or a range of values representative of user authentication information*" and "*the one or more types of sound parameters comprises at least one speech parameter representative of artificial speech.*" Nothing in Kondo teaches the use of sound parameters for user authentication or that the sound parameters include at least one speech parameter representative of artificial speech. Consequently, these limitations are not taught by Kondo.

Additionally, Applicant has added new independent claims 34 and 35 having substantially the same scope of independent claims 1, 11, 16, 21, 24, 27, 29 and 31, respectively. Applicant believes the application is in condition for allowance. Reconsideration and an early allowance are respectfully requested.

Applicant has reviewed the references made of record and asserts that the pending claims are patentable over the references made of record.

In view of the above, therefore, Applicant respectfully requests reconsideration and withdrawal of the rejection of, and/or objection and allowance of claims 1-35.

Should any of the above rejections be maintained, Applicant respectfully requests that the noted limitations be identified in the cited references with sufficient specificity to allow Applicant to evaluate the merits of such rejections. In particular, rather than generally citing whole sections or columns, Applicant requests that the each claimed element be specifically identified in the prior art to permit evaluating the references.

CONCLUSION

In light of the amendments contained herein, Applicant submits that the application is in condition for allowance, for which early action is requested.

Please charge any fees or overpayments that may be due with this response to Deposit Account No. 17-0026.

Respectfully submitted,

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